

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :
TAKEHIKO TOJO, ET AL. : EXAMINER: STEITZ, RACHEL R.
SERIAL NO: 10/560,044 :
FILED: DECEMBER 8, 2005 : GROUP ART UNIT: 3732
FOR: HAIR HOLDER :
:

DECLARATION UNDER 37 C.F.R. § 1.132

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

I, Takehiko TOJO, citizen of Japan, hereby declare and state that:

1. I am an employee having the title of a senior researcher at Kao Corporation, located at 2606, Akabane, Ichikai-machi, Haga-gun, TOCHIGI 321-3497 JAPAN.

2. On July 21, 2009, I conducted an experiment comparing the curl finish of Example 3 and Comparative Example 3 as discussed below.

3. Example 3 is a hair holder of the same size obtained in Example 1 described on pages 10 and 11 of the original specification. Specifically, Example 3 was prepared using a porous film for a diaper (weight per unit area: 20 g/m²; thickness: 0.02 mm; manufactured by Kao Corporation) as a first side sheet of a tube of the hair holder. A polyester nonwoven fabric (Smash Y15150, available from Asahi Chemical Industry Co., Ltd.; weight per unit area: 150 g/m²) was used as a second side sheet. The two sheets were joined along their long side edges to

make a tube (hair holder) having a length of 250 mm, a major diameter of 70 mm, and a minor diameter of 0.5 mm.

Thus, the hair holder of Example 3 included a flat tube having a sheet which forms a first side and a sheet which forms a second side to allow a hair bundle to be inserted from an opening at one end of the tube toward an opening at an other end thereof such that, when the hair holder is rolled up, the sheet which forms the first side is on an outside of the tube. The sheet which forms the first side of the tube is more extensible in a length direction of the tube than the sheet which forms the second side of the tube. The sheet which forms the second side of the tube has a Taber stiffness of 0.4 mNm or higher. The sheet which forms the first side has an extensibility of at least 15 times an extensibility of the sheet which forms the second side under a load of 5 N.

The hair holder of Example 3 is commensurate in scope with Claim 1 of U.S. Application No. 10/560,044.

In order to evaluate a curl formed by the resulting hair holder of Example 3, a hair bundle weighing about 10 g was rolled up using the above-mentioned hair holder and was treated with commercially available thioglycolic acid-based permanent waving solutions (1:1; hard type).

The results are shown in the Table below.

4. Comparative Example 3 is a hair holder of the same size obtained in Example 1 described in the specification. Specifically, Comparative Example 3 was prepared using an LDPE (low-density polyethylene) film (thickness: 30 μ m) as a first side sheet of a tube of the hair holder. A polyester nonwoven fabric (Smash Y15150, available from Asahi Chemical Industry Co., Ltd.; weight per unit area: 150 g/m²) was used as a second side sheet. The two sheets were joined along their long side edges to make a tube (hair holder) having a length of 250 mm, a major diameter of 70 mm, and a minor diameter of 0.5 mm.

The sheet which forms the first side of Comparative Example 3 has an extensibility of 13 times an extensibility of the sheet which forms the second side under a load of 5 N. Further, the extensibility of the sheet which forms the first side is 10% or greater under the load of 5 N and the extensibility of the sheet which forms the second side is less than 5% under the load of 5 N

In order to evaluate a curl formed by the resulting hair holder of Comparative Example 3, a hair bundle weighing about 10 g was rolled up using the above-mentioned hair holder and was treated with commercially available thioglycolic acid-based permanent waving solutions (1:1; hard type). The results are shown in the Table below.

5. The Table below is comprised of the table from page 12 of the specification of U.S. Application No. 10/560,044, with the results of Example 3 and Comparative Example 3 added thereto. The results were evaluated with the visual evaluation and the curl finish ranks are the following:

- A: Uniform and orderly curl;
- B: Nearly uniform curl or loose curl; and
- C: Non-uniform and unattractive curl.

	Extension under 5 N Load (%)		Extensibility Ratio (First Side sheet/Second Side Sheet)(Times) ※1	Taber Stiffness of Second Side Sheet (mNm)	Curl Finish
	First Side Sheet	Second Side Sheet			
Example 1	29	0.2	145	2.0	A
Example 2	23.1	0.2	116	2.0	A
Example 3	12.0	0.2	60	2	A
Comparative Example 1	0.2	0.2	1	2	C
Comparative Example 2	2.5	0.4	6	0.22	C

Comparative Example 3	2.5	0.2	13	2	C
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※1 extensibility ratio recited in independent Claims 1 and 8 is at least 15 times

6. As is apparent from the results of the evaluation shown in the Table above, an orderly curl finish is achieved by using hair holders in which the first side sheet has an extensibility at least 15 times an extensibility of the sheet which forms the second side.

7. As is also apparent from the results of evaluation shown in the Table above, an orderly curl finish is *not* achieved by using hair holders in which the first side sheet has an extensibility less than 15 times an extensibility of the sheet which forms the second side.

8. Accordingly, the hair holder from Example 3, which has an extensibility ratio of "at least 15 times," as recited in Claims 1 and 8 of U.S. Application No. 10/560,044, is acceptable whereas the hair holder from Comparative Example 3 is not acceptable. This experiment confirms the unexpected significance of the claimed extensibility ratio.

9. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

10. Further declarants saith not

Takehiko Tohjo
Signature

March 04, 2010
Date